[54] **COMMUNICATION SCRAMBLER SYSTEM**

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[58] **Field of Search** .... 325/32, 42, 44; 179/1.5 R; 178/22

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[57] **ABSTRACT**

A scrambler system in which amplitude zero-crossings in speech are encrypted at a transmitter by combination with a pseudo-random digital sequence, the reverse process occurring at the receiver. The amplitude envelope need not be encrypted, but if desired, can be encrypted by combination with a further pseudo-random digital sequence. A higher level of scrambling can be achieved in the transmitted signal by using the conjugate of the amplitude envelope.

With a sequence bit rate of about two kilobits per second, there is no increase in bandwidth requirements compared to the transmission of unscrambled speech. Thus standard transceivers can be employed, and pre-existing ones readily modified for scrambling and unscrambling.

20 Claims, 4 Drawing Figures